

THE REDUCTION OF RUSBYANTHUS  
AND THE TRIBE RUSBYANTHEAE (GENTIANACEAE)

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THE SYSTEM FOLLOWED by most taxonomists for the classification of the Gentianaceae is that of Gilg (1895). In this system five tribes of the Gentianoideae are recognized, all distinguished on the basis of pollen grain characters: Gentianeae Gilg (40 genera), Rusbyantheae Gilg (1 genus), Helieae Gilg (15 genera), Voyriaceae Gilg (1 genus), and Leiphaimaeae Gilg (2 genera). With more adequate collections since Gilg's time, better equipment for the study of pollen grains, and utilization of a broader spectrum of characters, several of these tribes have been shown to be either unnatural or unnecessary. For example, *Voyriella* Miq., one of the two genera in Gilg's Leiphaimaeae is certainly more correctly classified among the Gentianeae; the other genus, *Leiphaimos* Cham. & Schlecht., is probably congeneric with *Voyria* Aublet, therefore completely eliminating the tribe. In this paper, the elimination of the Rusbyantheae is proposed in addition.

**Macrocarpaea cinchonifolia** (Gilg) Weaver, comb. nov.

*Rusbyanthus cinchonifolius* Gilg in Engler & Prantl, Nat. Pflanzenfam. 4(2): 95. 1895. LECTOTYPE: Bolivia: Mapiri, *Rusby 1173* (NY).

*M. pachystyla* sensu Ewan, Contr. U.S. Natl. Herb. 29: 245. 1948.

To judge from the few available collections, the distribution of this species ranges from 1000 to 1800 meters in the Andes of the Peruvian Departments of Huanuco and Puno and the Bolivian Department of La Paz. It is closely related to *Macrocarpaea viscosa* (R. & P.) Gilg, *M. corymbosa* (R. & P.) Ewan, and *M. pachystyla* Gilg, the three species found by Nilsson (1968) to have pollen of what he called the "*M. corymbosa*-type."

Gilg proposed the tribe Rusbyantheae to accommodate *Rusbyanthus cinchonifolius* Gilg, the pollen grains of which were supposedly unique in the family. He described them as lacking furrows but with three equatorial pores and with the exine beset with numerous large processes standing apart from each other at regular intervals. However, Nilsson (1968, 1970) recently described the pollen of *Rusbyanthus* as being 3-colporate (with 3 aperturate furrows), the normal condition in the family, and he noted a fine reticulum between the large, wartlike processes. In addition, he found that three species of *Macrocarpaea* (Griseb.) Gilg, the genus closest to *Rusbyanthus* in Gilg's treatment, but in the Gentianeae-Tachinae, possessed pollen of the same type.

In *Macrocarpaea* the exine pattern of the pollen grains is typically a coarse reticulum, the muri of which are 0.7–2  $\mu\text{m}$ . broad. Nilsson noted



that in transverse section the muri of these are similar to the processes of *Rusbyanthus* and that a reduction of the muri would lead to pollen of the *Rusbyanthus*-type. He suggested that the two genera might be combined.

Ewan (1948) considered *Macrocarpaea* and *Rusbyanthus* to be closely allied, and he listed the diagnostic features separating them as follows: *Rusbyanthus* with calyx lobes distinctly unequal, a berrylike capsule that dehisces irregularly, and large, lunate to reniform seeds 3–4 mm. long; and *Macrocarpaea* with calyx lobes essentially equal, a capsule dehiscent into 2 regular longitudinal valves, and small or minute seeds less than 2 mm. long. The calyx character, however, is not constant, many species of *Macrocarpaea* having distinctly unequal calyx lobes. Ewan badly misinterpreted the seeds and capsules of *Rusbyanthus*, his description undoubtedly based on fragments of a solanaceous plant mounted with several specimens of *R. cinchonifolius* (Rusby 1173, PH, US). A Miguel Bang collection, without number (NY), shows the capsule of *Rusbyanthus* to be a typical gentianaceous one, larger than but similar to that of many species of *Macrocarpaea*. The seeds, minute and flat with an elongate wing at each end, are also similar to those of many species of that genus.

Morphologically *Rusbyanthus cinchonifolius* fits perfectly well within *Macrocarpaea*; and since the pollen of the two is basically similar, there is no reason to recognize *Rusbyanthus* as a distinct genus, let alone the Rusbyantheae as a valid tribe. The date of publication is the same for both genera (Gilg, 1895), but since *Macrocarpaea* is by far the larger it is the logical choice as the name to be retained when the two are combined.

The nomenclatural history of *Macrocarpaea cinchonifolia* is somewhat confused. N. L. Britton annotated two specimens of this taxon (Rusby 1173, NY) as "*Lisianthus cinchonaefolius* (Britton, n. sp.)," at an unknown date, but the name was never published. Gilg (1895), in describing *Rusbyanthus* as a new genus, mentioned "*R. cinchonifolius* (Britt.) Gilg" as its sole species, evidently intending to make a new combination. But since neither the name nor the description of Britton's new species was ever published, the name *Rusbyanthus cinchonifolius* must be attributed to Gilg alone.

Gilg did not cite any specimens when he inadvertently described *Rusbyanthus cinchonifolius*; any specimens that may have been among the collections at Berlin, where he worked at that time, were destroyed during World War II. Therefore, a lectotype must be chosen.

By 1895 Rusby 1173 and a Bang collection without number were the only known collections of this taxon. Two specimens of the latter are preserved at the New York Botanical Garden. One is in fruit and the other consists of a vegetative branch. Since Bang's collections were distributed by Britton, these probably represent the first set. Therefore, it is assumed that this collection did not include flowering material. Gilg did not mention the capsule in his description of *Rusbyanthus*, so it is likely that he did not examine the Bang collections at least by the time



of publication. The Rusby collection consists of flowering material and is well distributed. One of the three specimens at the New York Botanical Garden was annotated by Gilg as "*Rusbyanthus cinchonifolius* Gilg n. gen." in 1896. This specimen is designated the lectotype of that name. Although Gilg's annotation was made the year after the name appeared in print, there is little doubt that this is the collection on which he based his description.

#### LITERATURE CITED

- EWAN, J. 1948. A revision of *Macrocarpaea*, a neotropical genus of shrubby gentians. *Contr. U.S. Natl. Herb.* 29(5): 209-249.
- GILG, E. 1895. Gentianaceae. *In*: A. ENGLER & K. PRANTL, *Die Natürlichen Pflanzenfamilien* 4(2): 50-108.
- NILSSON, S. 1968. Pollen morphology in the genus *Macrocarpaea* (Gentianaceae) and its taxonomical significance. *Sv. Bot. Tidskr.* 62: 338-364.
- . 1970. Pollen morphological contributions to the taxonomy of *Lisianthus* L. s. lat. (Gentianaceae). *Ibid.* 64: 1-43.

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